

Flash3D EDL Sensor Technology Advancement, Phase II

Completed Technology Project (2010 - 2011)



Project Introduction

3D Flash LIDAR is ideal for determining real-time spacecraft trajectory, speed, orientation, and range to the planet surface, as well as evaluating potential hazards at the landing site. The "framing camera" nature, of 3D Flash LIDAR systems, makes them well suited as hazard avoidance sensors for EDL. The Phase II effort seeks to improve the range precision of the existing TigerEye

TM

3D Flash LIDAR system, and do so over a much wider signal dynamic range. A range capability of 1- 10,000 meter is feasible. This effort will demonstrate the capability by producing an advanced sensor module incorporating newer detectors and other system advancements. This advanced sensor module will be installed on NASA JPL's 3D Flash LIDAR TigerEye

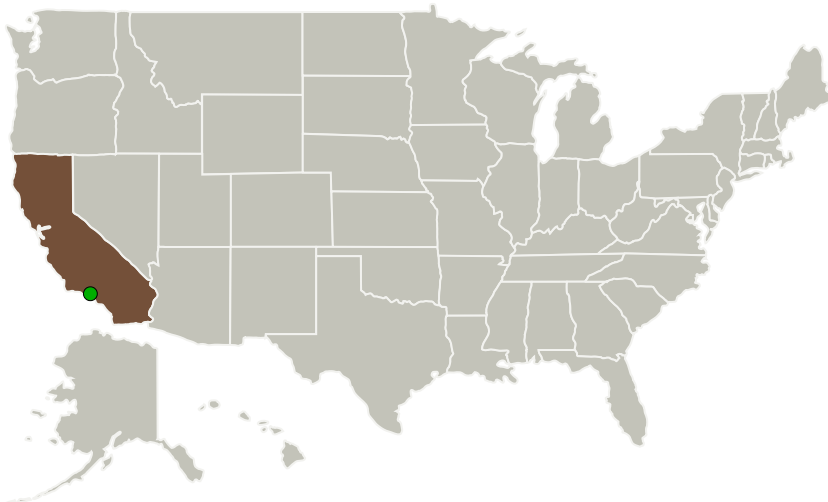
TM

camera system. Advanced Scientific Concepts Inc. (ASC) is a small business, which has developed a number of 3D flash LADAR systems. Flash Ladar sensors are 3D video systems that return range and intensity information for each pixel in real time, and is functionally equivalent to 16000 range finders on one chip. The TigerEye

TM

is 1.2kg, 20 Watts, and 10 cm on a side.

Primary U.S. Work Locations and Key Partners



Flash3D EDL Sensor Technology Advancement, Phase II

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Flash3D EDL Sensor Technology Advancement, Phase II

Completed Technology Project (2010 - 2011)



Organizations Performing Work	Role	Type	Location
Advanced Scientific Concepts, Inc.	Lead Organization	Industry	Goleta, California
● Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations

California

Project Transitions

**March 2010:** Project Start**December 2011:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/139010>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Advanced Scientific Concepts, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

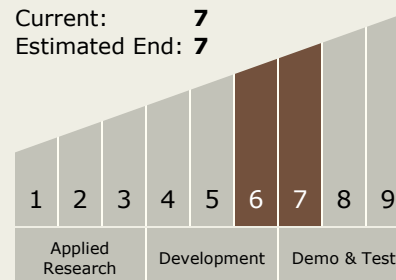
Steve Silverman

Technology Maturity (TRL)

Start: 6

Current: 7

Estimated End: 7



Flash3D EDL Sensor Technology Advancement, Phase II

Completed Technology Project (2010 - 2011)



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - └ TX05.4 Network Provided Position, Navigation, and Timing
 - └ TX05.4.2 Revolutionary Position, Navigation, and Timing Technologies

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System